

Optimal Solitaire Yahtzee* Strategies

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<http://wwpa.win.tue.nl/misc/yahtzee/>

*) Yahtzee is a registered trademark of
the Milton Bradley Company.

Equipment

- **5 Dice:** values 1 through 6 equiprobable
- **1 Score Card:**

Category	Score	
<i>Aces*</i>	<input type="text" value="..."/>	S
<i>Twos*</i>	<input type="text" value="..."/>	U
<i>Threes*</i>	<input type="text" value="..."/>	P
<i>Fours*</i>	<input type="text" value="..."/>	P
<i>Fives*</i>	<input type="text" value="..."/>	E
<i>Sixes*</i>	<input type="text" value="..."/>	R
<i>Upper Section Bonus</i>	<input type="text" value="..."/>	N
<i>Three of a Kind*</i>	<input type="text" value="..."/>	S
<i>Four of a Kind*</i>	<input type="text" value="..."/>	L
<i>Full House*</i>	<input type="text" value="..."/>	O
<i>Small Straight*</i>	<input type="text" value="..."/>	W
<i>Large Straight*</i>	<input type="text" value="..."/>	E
<i>Yahtzee*</i>	<input type="text" value="..."/>	R
<i>Chance*</i>	<input type="text" value="..."/>	O
<i>Extra Yahtzee Bonus</i>	<input type="text" value="..."/>	N
<i>GRAND TOTAL</i>	<input type="text" value="..."/>	

*) Primary categories

Playing Rules

Take *empty* score card

repeat

Roll *all* dice

Keep any* dice, reroll other dice

Keep any* dice, reroll other dice

Score roll in any* *empty* primary category

until *all* primary categories scored

Calculate *GRAND TOTAL* for final score

Aim: Maximize final score

*) Player is free to choose among options

Scoring Rules

Category	Condition	Score
<i>Aces</i>	—	sum 1s
<i>Twos</i>	—	sum 2s
<i>Threes</i>	—	sum 3s
<i>Fours</i>	—	sum 4s
<i>Fives</i>	—	sum 5s
<i>Sixes</i>	—	sum 6s
<i>U. S. Bonus</i>	U.S.Tot ≥ 63	35 once
<i>Three of a Kind</i>	≥ 3 equals	sum values
<i>Four of a Kind</i>	≥ 4 equals	sum values
<i>Full House</i>	2+3 equals*	25
<i>Small Straight</i>	≥ 4 in seq.*	30
<i>Large Straight</i>	5 in seq.*	40
<i>Yahtzee</i>	5 equals	50
<i>Chance</i>	—	sum values
<i>Extra Y. Bonus</i>	5 equals & 50 at Y.	100 each
<i>GRAND TOTAL</i>	—	sum above

*) 5 *ys* act here as **Joker**, *provided* categories *ys* and *Yahtzee* have been scored already.